

in so as to have its "head" end above the soil. The procedure is just the reverse of this. It goes in "head" first so as to have the "tail" end above the bottom in order that the incurrent and excurrent apertures, which are at the rear end, may admit water, carrying air and food, and allow discharge of the vitiated water and fecal matter.

In that day they had no inkling of the delicate, yet efficient means of conveying food by ciliary action to the mouth, nor of the way in which the intestinal tract and gill action keep fecal matter and vitiated water from mixing within the shell with the fresh, life-sustaining water taken in from stream or lake. They knew nothing of glochidia, nor of other embryonic mollusks, very little about the nacre, prismatic structure or periostracum. To the internal anatomy of mollusks they gave scarcely a thought.

We, of this day are not exactly satisfied with the progress that has been made in the study of mollusks, but it is comforting to feel that if Bruguière and the other old-timers could return to the scene of their labors they would be astounded by the strides that have been made—and the promising outlook of the future. They could easily understand why the term conchology is gradually becoming obsolete and the term malacology is looked upon with favor as more truthfully describing a science which is no longer a mere amusement, but which has a dignity and importance equal to those of any other branch of natural science.

A NEW LAND SHELL FROM SAN BENITO COUNTY,
CALIFORNIA

BY HERBERT N. LOWE

On a visit to the Pinnacles National Monument in the summer of 1917 the writer collected a single living specimen of a form of *Helminthoglypta* which appeared to be new. In July 1929 a special trip was made to search for further specimens, which resulted in seven living adults and several dead ones in good condition.

It seems to be a very distinct and well marked species, nearest to *H. dupetithouarsi* but having some resemblance to the *H. traski* series.

HELMINTHOGLYPTA BENITOENSIS, new species Plate 5, fig. 1.

The shell is umbilicate, rather solid, dilute russet, fading to isabella color on the base, having a narrow russet band enclosed between two yellowish-white ones. Spire moderately elevated, whorls 6, somewhat convex, slowing increasing. Surface glossy, with sculpture of fine, rather sharp, slightly retractive lines of growth, and showing microscopic very short hairs or their scars arranged in diagonal series in places on the antepenult whorl, the later whorls finely malleate, the malleation more conspicuous on the base, becoming weak on the last half whorl, which is finely papillose immediately behind the lip. Aperture oblique, oval, banded within. Lip thickened, rounded, expanded above, outer and basal margins reflected, the columellar margin dilated over part of the umbilicus.

Type: Alt. 13.5, max. diam. 21.9, min. diam. 17.9, umbilicus 3.5 mm.

Largest: Alt. 13.9, max. diam. 24.5, min. diam. 19.6, umbilicus 3.9 mm.

Smallest: Alt. 12, max. diam. 20.1, min. diam. 16.9, umbilicus 3 mm.

Paratype: Alt. 12.3, max. diam. 21.7, min. diam. 18.4, umbilicus 3 mm.

Type No. 1021 L. A. Mus., collected by H. N. Lowe. Paratypes in coll. Acad. N. S. Phila. No. 151404, and coll. Cal. Acad. Sci.

From the *dupetithouarsi* series this new form differs by the more depressed shape with decidedly smaller aperture. The peristome is, relatively to the size of the shell, better developed than usual in *H. dupetithouarsi*, and far more reflected and thickened than in the allied *helminthoglyptas* of San Luis Obispo county.